

Application No.: 10/849,520  
Amendment under 37 CFR 1.111  
Reply to Office Action dated May 6, 2005  
August 1, 2005

AMENDMENTS TO THE CLAIMS

Please substitute the following claims for the pending claims with the same numbers respectively:

Claims 1-9 (Cancelled):

Please add the following new claims 10-19 as follows:

Claim 10 (New): A flow sensor comprising:

a sensor head section which comprises

a case having six faces, wherein at least two of said faces each include an opening disposed therein,

a pipe line through which the fluid passes, said pipe line being disposed so as to pass through the opening disposed in each of said at least two of said faces of said case,

a detector for detecting the flow quantity of the fluid, and

a flow indicator having a plurality of light emission sections disposed on one of said faces of said

Application No.: 10/849,520  
Amendment under 37 CFR 1.111  
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case along a longitudinal direction of said pipe line and turning on a number of said plurality of light emission sections according to the detected flow quantity of the fluid,

wherein said case has a width perpendicular to the longitudinal direction of said pipe line, said pipe line has a width perpendicular to the longitudinal direction of said pipe line, and the width of said case is approximately equal to the width of said pipe line, and

wherein one of said faces of said case consists of said plurality of light emitting sections and a planar face whereby the width of said case can be minimized by using said plurality of light emitting sections disposed along the longitudinal direction of said pipe line; and

a sensor main section provided as a separate body from said sensor head section which comprises

a display section for displaying a value of the flow quantity as a numeric value, and

an output section for outputting a signal based on the value of the flow quantity.

Application No.: 10/849,520  
Amendment under 37 CFR 1.111  
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Claim 11 (New): The flow sensor as claimed in claim 10, wherein said sensor head section further comprises a vortex generation member provided in said pipe line for generating a Karman vortex, and wherein said detector includes a pair of ultrasonic devices attached on an outer peripheral surface of said pipe line along a perpendicular direction of said face on which said flow indicator is disposed so that said pipe line is located between said ultrasonic devices.

Claim 12 (New): The flow sensor as claimed in claim 11, wherein said sensor head section further comprises a press member having a pair of press parts for pressing said pair of ultrasonic devices against said pipe line and a joint part for joining said pair of press parts.

Claim 13 (New): The flow sensor as claimed in claim 11, wherein said case includes a housing space for housing a circuit board disposed adjacent to one of the ultrasonic devices in the perpendicular direction of said face on which said flow indicator is disposed.

Application No.: 10/849,520  
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Claim 14 (New): The flow sensor as claimed in claim 13, wherein said case includes a hermetic seal for hermetically sealing said pair of ultrasonic devices and a part of said pipe line.

Claim 15 (New): The flow sensor as claimed in claim 14, wherein said housing space and a space receiving said hermetic seal are connected to each other.

Claim 16 (New): The flow sensor as claimed in claim 10, wherein said sensor head section further comprises an alarm detector for detecting at least one of whether the fluid is filled in said pipe line and whether there is a bubble in the fluid, an alarm output portion for outputting an alarm signal based on a detection of said alarm detector, and wherein said flow indicator of said sensor head section displays an alarm based on the alarm signal outputted by said alarm output portion.

Claim 17 (New): The flow sensor as claimed in claim 10, wherein said sensor head section further comprises an alarm detector for detecting at least one of whether the fluid is filled in said pipe line and whether there is a bubble in the

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Amendment under 37 CFR 1.111  
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fluid, and an alarm output portion for outputting an alarm signal based on the detection of said alarm detector, and wherein said display section of said sensor main section displays an alarm based on the alarm signal outputted by said alarm output portion.

Claim 18 (New): The flow sensor as claimed in claim 17, wherein when said alarm output portion outputs the alarm signal, said display section of said sensor main section displays the value of the flow quantity.

Claim 19 (New): The flow sensor as claimed in claim 18, further comprising: a compute section for computing the value of the flow quantity based on the flow quantity of the fluid, and said compute section performing different processing when the alarm signal is on.